Multhoff 10/ 526 586 = Granzyme B & Hsp70 NK & tumor cells

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 NEWS  3  OCT 23   The Derwent World Patents Index suite of databases on STN
                   has been enhanced and reloaded
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 NEWS  5  NOV 03   JAPIO enhanced with IPC 8 features and functionality
 NEWS  6  NOV 10   CA/CAplus F-Term thesaurus enhanced
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                   8.01c now available
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                   to 50,000
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 NEWS 11  DEC 14   WPIDS/WPINDEX/WPIX manual codes updated
 NEWS 12  DEC 14   GBFULL and FRFULL enhanced with IPC 8 features and
                   functionality
 NEWS 13  DEC 18   CA/CAplus pre-1967 chemical substance index entries enhanced
                   with preparation role
 NEWS 14  DEC 18   CA/CAplus patent kind codes updated
 NEWS 15  DEC 18   MARPAT to CA/CAplus accession number crossover limit
increased
                   to 50,000
 NEWS 16  DEC 18   MEDLINE updated in preparation for 2007 reload
 NEWS 17  DEC 27   CA/CAplus enhanced with more pre-1907 records
 NEWS 18  JAN 08   CHEMLIST enhanced with New Zealand Inventory of Chemicals
 NEWS 19  JAN 16   CA/CAplus Company Name Thesaurus enhanced and reloaded
 NEWS 20  JAN 16   IPC version 2007.01 thesaurus available on STN
 NEWS 21  JAN 16   WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
 NEWS 22  JAN 22   CA/CAplus updated with revised CAS roles
 NEWS 23  JAN 22   CA/CAplus enhanced with patent applications from India
 NEWS 24  JAN 29   PHAR reloaded with new search and display fields
 NEWS 25  JAN 29   CAS Registry Number crossover limit increased to 300,000 in
                   multiple databases

 NEWS EXPRESS  NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

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=> file biosis embase medline

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FILE 'MEDLINE' ENTERED AT 18:23:03 ON 02 FEB 2007

=> s Hsp70(s)ion channel
L1 8 HSP70(S) ION CHANNEL

=> s Hsp70(s)cell membrane
L2 51 HSP70(S) CELL MEMBRANE

=> s Hsp70(s)cell surface
L3 117 HSP70(S) CELL SURFACE

=> s L1 and L2
L4 0 L1 AND L2

=> s L1 or L2
L5 59 L1 OR L2

=> L1 duplicate remove
L1 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> duplicate remove
ENTER L# LIST OR (END):L1
DUPLICATE PREFERENCE IS 'BIOSIS, EMBASE, MEDLINE'
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n
PROCESSING COMPLETED FOR L1
L6 3 DUPLICATE REMOVE L1 (5 DUPLICATES REMOVED)

=> d L6 1-3 bib abs

L6 ANSWER 1 OF 3 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 1
AN 2006:406162 BIOSIS
DN PREV200600408261
TI Differential effects of Hsc70 and Hsp70 on the intracellular trafficking and functional expression of epithelial sodium channels.
AU Goldfarb, Samuel B.; Kashlan, Ossama B.; Watkins, Jeffrey N.; Suaud, Laurence; Yan, Wusheng; Kleyman, Thomas R.; Rubenstein, Ronald C. [Reprint

Author]
CS Childrens Hosp Philadelphia, Div Pulm Med, 34th St and Civic Ctr Blvd,Abramson 410C, Philadelphia, PA 19104 USA
rrubenst@mail.med.upenn.edu
SO Proceedings of the National Academy of Sciences of the United States of America, (APR 11 2006) Vol. 103, No. 15, pp. 5817-5822.
CODEN: PNASA6. ISSN: 0027-8424.
DT Article
LA English
ED Entered STN: 17 Aug 2006
Last Updated on STN: 17 Aug 2006
AB The members of the cytoplasmic 70-kDa heat shock protein family are involved in appropriate folding and trafficking of newly synthesized proteins in the cell. Hsc70, which is expressed constitutively, and Hsp70, the expression of which is stress- and heat shock-induced, are often considered to have similar cellular functions in this regard, but there are suggestions that the intracellular functions of these homologous but not identical proteins may differ. We tested the hypothesis that Hsc70 and Hsp70 would have differential effects on the expression of the epithelial sodium channel (ENaC). In Xenopus oocytes, overexpression of human Hsc70 decreased the functional (defined as amiloride-sensitive whole-oocyte current) and surface expression of murine ENaC (mENaC) in a concentration-dependent fashion. in contrast, coinjection of a moderate amount of Hsp70 cRNA (10 ng) increased the functional and surface expression of mENaC, whereas a higher amount of coinjected Hsp70 cRNA (30 ng) decreased mENaC functional and surface expression. The increase in mENaC functional expression with coinjection of 10 ng of Hsp70 cRNA was antagonized by the additional coinjection of Hsc70 cRNA in a concentration-dependent fashion. These data are consistent with Hsc70 and Hsp70 having differential and antagonistic effects with regard to the intracellular trafficking of mENaC in oocytes, which may have an impact on our understanding and potential treatment of diseases of aberrant ion channel trafficking.

L6 ANSWER 2 OF 3 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 2
AN 2004:143063 BIOSIS
DN PREV200400131751
TI Calmodulin is involved in heat shock signal transduction in wheat.
AU Liu, Hong-Tao; Li, Bing; Shang, Zhong-Lin; Li, Xiao-Zhi; Mu, Rui-Ling; Sun, Da-ye; Zhou, Ren-gang [Reprint Author]
CS Institute of Molecular Cell Biology, Hebei Normal University, Shijiazhuang, 050016, China
zhourengang@163.com
SO Plant Physiology (Rockville), (July 2003) Vol. 132, No. 3, pp. 1186-1195. print.
ISSN: 0032-0889 (ISSN print).
DT Article
LA English
ED Entered STN: 10 Mar 2004
Last Updated on STN: 10 Mar 2004
AB The involvement of calcium and calcium-activated calmodulin (Ca2+-CaM) in heat shock (HS) signal transduction in wheat (Triticum aestivum) was investigated. Using Fluo-3/acetoxymethyl esters and laser scanning confocal microscopy, it was found that the increase of intracellular free calcium ion concentration started within 1 min after a 37degreeC HS. The levels of CaM mRNA and protein increased during HS at 37degreeC in the presence of Ca2+. The expression of hsp26 and hsp70 genes was up-regulated by the addition of CaCl2 and down-regulated by the calcium ion chelator EGTA, the calcium ion channel blockers LaCl3 and verapamil, or the CaM antagonists N-(6-aminohexyl)-5-chloro-1-naphthalenesulfonamide and chlorpromazine. Treatment with Ca2+ also increased, and with EGTA, verapamil, chlorpromazine, or trifluoperazine

decreased, synthesis of HS proteins. The temporal expression of the CaM1-2 gene and the hsp26 and hsp70 genes demonstrated that up-regulation of the CaM1-2 gene occurred at 10 min after HS at 37degreeC, whereas that of hsp26 and hsp70 appeared at 20 min after HS. A 5-min HS induced expression of hsp26 after a period of recovery at 22degreeC after HS at 37degreeC. Taken together, these results indicate that Ca2+-CaM is directly involved in the HS signal transduction pathway. A working hypothesis about the relationship between upstream and downstream of HS signal transduction is presented.

L6 ANSWER 3 OF 3 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 3
AN 1996:377635 BIOSIS
DN PREV199699099991
TI Exogenous heat shock protein hsp70 activates potassium channels in U937 cells.
AU Negulyaev, Yuri A. [Reprint author]; Vedernikova, Elena A.; Kinev, Alexander V.; Voronin, Alexey P.
CS Inst. Cytol., Russian Academy Sci., 194064, St. Petersburg, Russia
SO Biochimica et Biophysica Acta, (1996) Vol. 1282, No. 1, pp. 156-162. CODEN: BBACAQ. ISSN: 0006-3002.
DT Article
LA English
ED Entered STN: 26 Aug 1996
Last Updated on STN: 26 Aug 1996
AB With the use of patch clamp technique, the effect of exogenous heat shock protein hsp70 on ion channel properties in
the plasma membrane of human promonocyte U937 cells has been examined. Cell-attached experiments showed that the addition of 30-100 mu-g/ml hsp70 to the pipette solution resulted in an activation of outward currents through potassium-selective channels of 9 pS unitary conductance. The activity of K+-selective channels did not depend on membrane voltage and could be controlled by the intracellular free calcium concentration as revealed in inside-out recordings. K+ channels with similar conductance and kinetic behaviour were found in normal cell-attached patches very rarely. Outside-out experiments showed that the addition of hsp70 to the external solution induced a channel-like stepwise increase of inward current which may provide cation entry from the extracellular medium. The interaction of extracellular hsp70 with the membrane surface of the native cell and of the excised fragment was found to be different. The results suggest that hsp70-induced activation of Ca-dependent K channels in monocyte-macrophage cells may be due to a local increase of free Ca-2+ concentration just near the inner membrane side.

=> s L2 and L3
L7 3 L2 AND L3

=> duplicate remove
ENTER L# LIST OR (END):L7
DUPLICATE PREFERENCE IS 'BIOSIS, EMBASE, MEDLINE'
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n
PROCESSING COMPLETED FOR L7
L8 1 DUPLICATE REMOVE L7 (2 DUPLICATES REMOVED)

=> d L8 1 bib abs

L8 ANSWER 1 OF 1 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 1
AN 2000:32691 BIOSIS
DN PREV200000032691
TI Synergistic effects of heat and ET-18-OCH3 on membrane expression of hsp70 and lysis of leukemic K562 cells.

AU Botzler, Claus; Ellwart, Joachim; Guenther, Wolfgang; Eissner, Guenther; Multhoff, Gabriele [Reprint author]
CS GSF-Institute of Molecular Immunology, Marchioninistr. 25, 81377, Munich, Germany
SO Experimental Hematology (Charlottesville), (March, 1999) Vol. 27, No. 3, pp. 470-478. print.
CODEN: EXHMA6. ISSN: 0301-472X.
DT Article
LA English
ED Entered STN: 13 Jan 2000
Last Updated on STN: 31 Dec 2001
AB We previously reported that cell surface expression of hsp70, the major stress inducible member of the 70-kDa heat shock protein family, is inducible by nonlethal heat as well as by treatment with the membrane-interactive compound alkyl-lysophospholipid 1-octadecyl-2-methyl-rac-glycero-3-phosphocholine (ET-18-OCH3) selectively on human tumor cell lines. Plasma membrane expression of hsp70 increases selectively the sensitivity of tumor cells to lysis and, therefore, might play an important role in the antitumor immune response. Here, we demonstrate that a combined treatment consisting of sublethal heat (41.8degreeC) and a noncytotoxic concentration of ET-18-OCH3 (25 mug/mL) results in a synergistic increase in the amount of cell membrane-bound hsp70 on leukemic K562 cells and on freshly isolated bone marrow of a chronic myelogeneous leukemia (CML) patient, but not on peripheral blood lymphocytes or CD34+ hematopoietic progenitor cells of healthy human individuals. Under these conditions the repopulating capacity of progenitor cells was not influenced. The increased hsp70 membrane expression on leukemic K562 cells results in a significantly increased sensitivity to lysis mediated by natural killer cells. In contrast to leukemic cells, the lysis of peripheral blood lymphocytes and CD34+ progenitor cells that lack expression of hsp70 on their plasma membrane was not negatively influenced by this treatment. A nonspecific disruption of the plasma membrane could be excluded, because treatment with a nontoxic concentration of the detergent Tween20 did not have an influence on hsp70 cell surface expression or on the sensitivity to lysis. Our findings might have further clinical implications with respect to purging of bone marrow from patients suffering from leukemia at sublethal conditions to induce a tumor-selective immune response.

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DUPLICATE PREFERENCE IS 'BIOSIS, EMBASE, MEDLINE'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L3
L9            47 DUPLICATE REMOVE L3 (70 DUPLICATES REMOVED)

=> s L9 Hsp70(5w)protein transport
MISSING OPERATOR L9 HSP70
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s L9 Hsp70(s)transport
MISSING OPERATOR L9 HSP70
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s Hsp70(s)transport
L10          200 HSP70(S) TRANSPORT

=> s L9 and L10
L11            1 L9 AND L10
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=> d L11 1 bib abs

L11  ANSWER 1 OF 1  BIOSIS  COPYRIGHT (c) 2007 The Thomson Corporation  on STN
AN   2003:69555  BIOSIS
DN   PREV200300069555
TI   Heat shock protein 70: Role in antigen presentation and immune
     stimulation.
AU   Milani, V.; Noessner, E.; Ghose, S.; Kuppner, M.; Ahrens, B.; Scharner,
     A.; Gastpar, R.; Issels, R. D. [Reprint Author]
CS   KKG Hyperthermie, GSF-National Research Center for Environment and Health,
     81377, Munich, Germany
     issels@med3.med.uni-muenchen.de
SO   International Journal of Hyperthermia, (November-December 2002) Vol. 18,
     No. 6, pp. 563-575. print.
     ISSN: 0265-6736 (ISSN print).
DT   Article
     General Review; (Literature Review)
LA   English
ED   Entered STN: 29 Jan 2003
     Last Updated on STN: 29 Jan 2003
AB   Heat shock proteins (HSP) when released into the extracellular milieu can
     act simultaneously as a source of antigen due to their ability to
     chaperone peptides and as a maturation signal for dendritic cells, thereby
     inducing DCs to cross-present antigens to CD8+ T-cells.  HSP can also act
     independently from associated peptides, stimulating the innate immune
     system.  Previous results regarding the activation of NK cells by
     HSP70 cell surface expression on tumour cells
     and soluble HSP70 will be further covered elsewhere within this
     issue.  For cross-presentation, HSP70-peptide complexes (HSP70-PC) were
     used from two human melanoma cell lines that differ in the expression of
     the tumour-associated antigen tyrosinase.  Purified HSP70-PC consists of
     both the constitutively expressed HSC70 and the inducible HSP70.
     HSP70-peptide complexes purified from tyrosinase positive (HSP70-PC/tyr+)
     human melanoma cells, incubated with immature DCs, results in the
     activation of HLA-*A0201-restricted tyrosinase peptide-specific T-cells.
     Receptor-mediated uptake of HSP70-PC by DCs and intracellular
     transport are required for efficient MHC class I restricted
     cross-presentation of chaperoned peptides.  Demonstration of HSP70-PC
     mediated cross-presentation of such non-mutated naturally expressed tumour
     antigens is of special clinical interest with regard to hyperthermia.
     Tumour regression and improved local control have been shown within
     clinical phase II/III trials integrating regional hyperthermia combined
     with radiation and/or chemotherapy in multimodal treatment strategies.
     According to the proposed concept, local necrosis induced by hyperthermic
     treatment induces the release of HSPs, followed by uptake, processing and
     presentation of associated peptides by DCs.  By acting as chaperone and a
     signal for DC maturation, HSP70-PC might efficiently prime circulating
     T-cells.  Therefore, upregulating HSP70 and causing local necrosis in
     tumour tissue by hyperthermia offers great potential as a new approach to
     directly activate the immune system.


=> s Hsp70(5w)channel
L12          17 HSP70(5W) CHANNEL

=> s L10 and L12
L13           0 L10 AND L12

=> duplicate remove
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DUPLICATE PREFERENCE IS 'BIOSIS, EMBASE, MEDLINE'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
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L14 6 DUPLICATE REMOVE L12 (11 DUPLICATES REMOVED)

=> d L14 1-6 bib abs

L14 ANSWER 1 OF 6 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 1
AN 2003:577657 BIOSIS
DN PREV200300583456
TI Cell surface-bound heat shock protein 70 (Hsp70) mediates perforin-independent apoptosis by specific binding and uptake of granzyme B.
AU Gross, Catharina; Koelch, Walter; DeMaio, Antonio; Arispe, Nelson; Multhoff, Gabriele [Reprint Author]
CS Dept. of Hematology, University Hospital Regensburg, Franz-Josef Strauss Allee 11, 93053, Regensburg, Germany
gabriele.multhoff@klinik.uni-regensburg.de
SO Journal of Biological Chemistry, (October 17 2003) Vol. 278, No. 42, pp. 41173-41181. print.
CODEN: JBCHA3. ISSN: 0021-9258.
DT Article
LA English
ED Entered STN: 10 Dec 2003
Last Updated on STN: 10 Dec 2003
AB Cell surface-bound heat shock protein 70 (Hsp70) renders tumor cells more sensitive to the cytolytic attack mediated by natural killer (NK) cells. A 14-amino acid Hsp70 sequence, termed TKD (TKDNNLLGRFELSG, aa450-463) could be identified as the extracellular localized recognition site for NK cells. Here, we show by affinity chromatography that both, full-length Hsp70-protein and Hsp70-peptide TKD, specifically bind a 32-kDa protein derived from NK cell lysates. The serine protease granzyme B was uncovered as the 32-kDa Hsp70-interacting protein using matrix-assisted laser desorption ionization time-of-flight mass peptide fingerprinting. Incubation of tumor cells with increasing concentrations of perform-free, isolated granzyme B shows specific binding and uptake in a dose-dependent manner and results in initiation of apoptosis selectively in tumor cells presenting Hsp70 on the cell surface. Remarkably, Hsp70 cation channel activity was also determined selectively in purified phospholipid membranes of Hsp70 membrane-positive but not in membrane-negative tumor cells. The physiological role of our findings was demonstrated in primary NK cells showing elevated cytoplasmic granzyme B levels following contact with TKD. Furthermore, an increased lytic activity of Hsp70 membrane-positive tumor cells could be associated with granzyme B release by NK cells. Taken together we propose a novel perform-independent, granzyme B-mediated apoptosis pathway for Hsp70 membrane-positive tumor cells.

L14 ANSWER 2 OF 6 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN DUPLICATE 2
AN 2003444341 EMBASE
TI Influence of K(ATP) Channel Inhibitor on the Changes of HSP70 Expression in Sevoflurane-induced Neonatal Rat Cardiomyocytes.
AU Tang Y.; Wang Q.; Li J.
CS Y. Tang, Department of Anesthesiology, Xiangya Hospital, Central South University, Changsha 410008, China
SO Journal of Sichuan University (Medical Science Edition), (2003) Vol. 34, No. 4, pp. 653-655. .
Refs: 9
ISSN: 1672-173X CODEN: SDXYAY
CY China
DT Journal; Article
FS 024 Anesthesiology
037 Drug Literature Index

LA Chinese
SL English; Chinese
ED Entered STN: 20 Nov 2003
Last Updated on STN: 20 Nov 2003
AB Objective: To study the roles of K(ATP) channel and HSP70 in sevoflurane-induced preconditioning in neonatal rat cardiomyocytes and their mutual relationship. Methods: The second generation of primary cultured cardiomyocytes were randomly divided into 5 groups: normal control, anoxia/reoxygenation, sevoflurane preconditioning, glyburide and glyburide plus sevoflurane. In each group, the cardiomyocytes were exposed to a 2-hour anoxia, followed by a 48-hour reoxygenation. We detected HSP70 expression at 0, 1, 12, 24, 36 and 48 hours after reoxygenation respectively. Results: At each time-point of reoxygenation, the expression of HSP70 in sevoflurane preconditioning group was significantly higher than that of normal control, anoxia/reoxygenation, glyburide and glyburide plus sevoflurane groups (P<0. 01). There was no significant difference concerning HSP70 expression among normal control, anoxia/reoxygenation, glyburide and glyburide plus sevoflurane groups (P> 0. 05). Conclusion: Both HSP70 and K(ATP) channel may be involved in the process of sevoflurane preconditioning in neonatal rat cardiomyocytes. Blocking the K(ATP) channel can inhibit the expression of HSP70.

L14 ANSWER 3 OF 6 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 3
AN 2003:207553 BIOSIS
DN PREV200300207553
TI Regulated cycling of mitochondrial Hsp70 at the protein import channel.
AU Liu, Qinglian; D'Silva, Patrick; Walter, William; Marszalek, Jaroslaw; Craig, Elizabeth A. [Reprint Author]
CS Department of Biochemistry, University of Wisconsin-Madison, Madison, WI, 53706, USA
ecraig@wisc.edu
SO Science (Washington D C), (4 April 2003) Vol. 300, No. 5616, pp. 139-141. print.
ISSN: 0036-8075 (ISSN print).
DT Article
LA English
ED Entered STN: 30 Apr 2003
Last Updated on STN: 30 Apr 2003
AB Hsp70 of the mitochondrial matrix (mtHsp70) provides a critical driving force for the import of proteins into mitochondria. Tim44, a peripheral inner-membrane protein, tethers it to the import channel. Here, regulated interactions were found to maximize occupancy of the active, adenosine 5'-triphosphate (ATP)-bound mtHsp70 at the channel through its intrinsic high affinity for Tim44, as well as through release of adenosine diphosphate (ADP)-bound mtHsp70 from Tim44 by the cofactor Mge1. A model peptide substrate rapidly released mtHsp70 from Tim44, even in the absence of ATP hydrolysis. In vivo, the analogous interaction of translocating polypeptide would release mtHsp70 from the channel. Consistent with the ratchet model of translocation, subsequent hydrolysis of ATP would trap the polypeptide, driving import by preventing its movement back toward the cytosol.

L14 ANSWER 4 OF 6 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 4
AN 2001:460392 BIOSIS
DN PREV200100460392
TI Effect of beta-naphthoflavone and dimethylbenz(a)anthracene on apoptosis and HSP70 expression in juvenile channel catfish (Ictalurus punctatus) ovary.
AU Weber, Lynn P.; Janz, David M. [Reprint author]

CS Department of Zoology, Oklahoma State University, 430 Life Sciences West, Stillwater, OK, 74078, USA
djanz@okstate.edu
SO Aquatic Toxicology (Amsterdam), (September, 2001) Vol. 54, No. 1-2, pp. 39-50. print.
CODEN: AQTODG. ISSN: 0166-445X.
DT Article
LA English
ED Entered STN: 26 Sep 2001
Last Updated on STN: 22 Feb 2002
AB Complex environmental mixtures such as pulp mill effluents and crude oil have been shown to increase ovarian cell apoptosis and affect heat shock protein (HSP) expression in fish. We hypothesize that polyaromatic hydrocarbons (PAH) mediate these effects. To test this hypothesis, we exposed juvenile channel catfish (Ictalurus punctatus) acutely to the aryl hydrocarbon receptor (AhR) agonists, beta-naphthoflavone (BNF; 75 mg/kg) or the model PAH, dimethylbenzZ(a)anthracene (DMBA; 50 mg/kg) via intraperitoneal injection. Apoptotic DNA fragmentation and HSP70 expression were determined in ovary and liver. Hepatic cytochrome P450 1A (CYP1A) was significantly induced, confirming that BNF and DMBA had distributed to internal organs and stimulated AhR. At 96 h post-injection, BNF and DMBA significantly increased apoptosis and decreased HSP70 expression in juvenile catfish ovaries. Although primary oocytes underwent the greatest rates of apoptosis compared to early or late vitellogenic follicles in all treatment groups, the cell type undergoing increased rates of apoptosis after BNF or DMBA exposure was not clear using terminal deoxynucleotidyl transferase (TdT)-mediated deoxyUTP nick end labeling (TUNEL). There was a significant negative relationship between expression of HSP70 and apoptosis in juvenile channel catfish ovaries. This differed from liver of these fish which did not exhibit increased apoptosis and instead increased hepatic HSP70 expression at 96 h post-injection. However, DMBA had no effect on apoptosis or HSP70 levels in more reproductively mature juvenile fish that were housed at a lower water temperature. This may be due to a developmental or temperature-dependent component to these responses. We propose that the decrease in ovarian HSP70 expression in response to BNF and DMBA may be causally related to the increase in ovarian cell apoptosis. Further experiments using a full time course, dose-response and methods to confirm that AhR is a direct mediator of these effects are required.

L14 ANSWER 5 OF 6 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 5
AN 1996:377635 BIOSIS
DN PREV199699099991
TI Exogenous heat shock protein hsp70 activates potassium channels in U937 cells.
AU Negulyaev, Yuri A. [Reprint author]; Vedernikova, Elena A.; Kinev, Alexander V.; Voronin, Alexey P.
CS Inst. Cytol., Russian Academy Sci., 194064, St. Petersburg, Russia
SO Biochimica et Biophysica Acta, (1996) Vol. 1282, No. 1, pp. 156-162.
CODEN: BBACAQ. ISSN: 0006-3002.
DT Article
LA English
ED Entered STN: 26 Aug 1996
Last Updated on STN: 26 Aug 1996
AB With the use of patch clamp technique, the effect of exogenous heat shock protein hsp70 on ion channel properties in the plasma membrane of human promonocyte U937 cells has been examined. Cell-attached experiments showed that the addition of 30-100 mu-g/ml hsp70 to the pipette solution resulted in an activation of outward currents through potassium-selective channels of 9 pS unitary conductance. The activity of K+-selective channels did not depend on membrane voltage and could be

controlled by the intracellular free calcium concentration as revealed in inside-out recordings. K+ channels with similar conductance and kinetic behaviour were found in normal cell-attached patches very rarely. Outside-out experiments showed that the addition of hsp70 to the external solution induced a channel-like stepwise increase of inward current which may provide cation entry from the extracellular medium. The interaction of extracellular hsp70 with the membrane surface of the native cell and of the excised fragment was found to be different. The results suggest that hsp70-induced activation of Ca-dependent K channels in monocyte-macrophage cells may be due to a local increase of free Ca-2+ concentration just near the inner membrane side.

L14 ANSWER 6 OF 6 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
DUPLICATE 6
AN 1995:18073 BIOSIS
DN PREV199598032373
TI Isolation of components of the chloroplast protein import machinery.
AU Schnell, Danny J. [Reprint author]; Kessler, Felix; Blobel, Gunter
CS Dep. Biol. Sci., Rutgers, State Univ. New Jersey, Newark, NJ 07102, USA
SO Science (Washington D C), (1994) Vol. 266, No. 5187, pp. 1007-1012.
CODEN: SCIEAS. ISSN: 0036-8075.
DT Article
LA English
ED Entered STN: 11 Jan 1995
Last Updated on STN: 11 Jan 1995
AB Components of the protein import machinery of the chloroplast were isolated by a procedure in which the import machinery was engaged in vitro with a tagged import substrate under conditions that yielded largely chloroplast envelope-bound import intermediates. Subsequent detergent solubilization of envelope membranes showed that six envelope polypeptides copurified specifically and, apparently, stoichiometrically with the import intermediates. Four of these polypeptides are components of the outer membrane import machinery and are associated with early import intermediates Two of these polypeptides have been characterized. One is a homolog of the heat shock protein hsp70; the other one is a channel-protein candidate.